Appendix B.
Acronyms and Definitions

B-1. Introduction

As each technical field of expertise involves it own acronyms, technical jargon, definitions and technical terms, it is necessary to include and define these terms. This appendix a provides a list of acronyms and definitions used in this EM and other commonly used acronyms and definitions intended to assist the FFMS designer and user.

B-2. Acronyms

A-E	Architect - Engineer
AA	Atomic Absorption
AAL	Ambient air level
AAM	Ambient air monitoring
AC	Automated Colorimetry
ACE	U.S. Army Corps of Engineers (EPA terminology)
ACGIH	American Conference of Governmental Industrial Hygienists
AFD	Alkali Flame Detector
AL	Action level
AMDAS	Air Monitoring Data Acquisition Telemetry System
AMTIC	Ambient Monitoring Technology Information Center
amu	Atomic mass units
APA	Air Pathway Analysis (assessment)
ARAR	Applicable or Relevant and Appropriate Requirement
ASCII	American Standard Code for Information Interchange
ASTM	American Society for Testing and Materials
ATSDR	Agency for Toxic Substances and Disease Registry
BACT	Best Available Control Technology
BAM	Beta Attenuation Monitor
BCDD/BCDF	Bromo/chloro Dibenzo-p-dioxins and Bromo/chloro Dibenzofurans
BETX	Benzene, ethylbenzene, toluene and xylene
BRAC	Base realignment and closure
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CARB	California Air Resource Board
CEGS	U.S. Army Corps of Engineers Guide Specification
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CERCLIS	CERCLA Information System
CFR	Code of Federal Regulations
CHIEF	Clearinghouse for Inventories and Emission Factors
CLD	Chemiluminescence Detector
CLP	Contract Laboratory Program
CMS	Carbon Molecular Sieve
CP	Calibration Principle or Procedure
COC	Chain of custody
COE	U.S. Army Corps of Engineers
CRM	Certified Reference Material
CTC	Control Technology Center
CTG	Control Technology Guidelines
CV	Coefficient of Variation
DAS	Data Acquisition System
DCQCR	Daily chemical Quality Control Report

DERP	Defense Environmental Restoration
DOAS	Differential Optical Absorption Spectrometer (Spectroscopy)
DQA	Data Quality Assessment
DQO	Data quality objective
ECD	Electron Capture Detector
EM	Engineer manual
EMTIC	Emission Measurement Technical Information Center
EPA	U.S. Environmental Protection Agency
EQL	Estimated quantitation limit
ER	Emergency removal
EV	Electron volt
FAA	Flame Atomic Absorption
FEP	Fluorinated Ethylene-propylene Copolymer
FFMS	Fixed-fenceline Monitoring System
FID	Flame ionization detector
FM	Frequency Modulated
FPD	Flame Photometric Detector
FR	Federal Register
FS	Feasibility study
FSP	Field Sampling Plan
FTIR	Fourier Transform Infrared Spectrometer
GC	Gas chromatograph
GC/MS	Gas chromatograph (chromotography) /mass spectrometer
GFAA	Graphic Furnace Atomic Absorption
GMCS	Gas Manufacturer's Certified Standards
GMPS	Gas Manufacturer's Primary Standard
GPC	Gel permeation column (chromatography)
GRAV	Gravimetric
HAP	Hazardous air pollutant
HECD	Hall Electrohylic Conductivity Detector
HC	Hydrocarbon
HPLC	High Performance Liquid Chromatography
HRGC	High Resolution Gas Chromatography
HRMS	High Resolution mass Spectroscopy
HRS	Hazard Ranking System
HSL	Hazardous Substances List
HSP	Health and Safety Plan
HSPL	Hazardous Substance Priority List
HTRW	Hazardous, Toxic, and Radioactive Waste
HV	High Volume
IC	Ion Chromatography
ICAP	Inductively coupled argon plasma emission spectroscopy
ICP	Inductively coupled plasma
I.D.	Inside Diameter
IDL	Instrument detection limit
IH	Industrial hygiene
IR	Infrared radiation (spectroscopy)
J-BOX	Junction Box
LAER	Lowest Achievable Emission Rate
LIMS	Laboratory Information Management System
M	Meter
MACT	Maximum Achievable Control Technology
met	Meteorological
MFC	Mass Flow Control
MP	Measurement Principle
MPPM	Meteorological Processor for Regulatory Models
MS	Mass spectrometer (spectroscopy)
MSD	Mass Selective Detector
NAA	Neutron Activation Analysis
NAAQS	National Ambient Air Quality Standards
NATICH	National Air Toxicities Information Clearing House
NCDC	National Climate Data Center
NCP	National Oil and Hazardous Substance Pollution Contingency Plan
NDIR	Nondispersive Infrared

NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute for Occupational Health and Safety
NIST	National Institute of Standards and Technology (formerly NBS)
NMOC	Nonmethane Organic Compounds (Hydrocarbons)
NPD	Nitrogen - phosphorus detector
NPL	National Priorities List
NSPS	New Source Performance Standards
NTG	National technical guidance
NTGS	National technical guidance study
NTIS	National Technical Information Services
NWS	National Weather Service
O&M	Operation and maintenance
OA	Optical Absorption
OAQPS	Office of Air Quality Planning and Standards
O.D.	Outside Diameter
OEL	Occupational exposure limit
OEW	Ordinance and Explosive Waste
OM	Optical Microscopy
OPM	Open path monitor
OPOM	Open Path Optical Monitoring
OSHA	Occupational Safety and Health Administration
OSWER	Office of Solid Waste and Emergency Removal
OVA	Organic vapor analyzer
P-G	Pasquill-Gifford
PA	Preliminary assessment
PAB	Pollutant Assessment Branch
PAH	Polynuclear aromatic hydrocarbon
PAL	Perimeter Action Level
PASP	Perimeter Air Sampling Plan
P_{bar}	Barometric Pressure
PCB	Polychlorinated biphenyl
PCDD/PCDF	Polychlorinated Dibenzo-p-Dioxins and Dibenzofurans
PE	Performance evaluation
PEL	Permissible exposure limit
PHDD/PHDF	Polyhalogenated Dibenzo-p-Dioxins and Dibenzofurans
PID	Photoionization detector
PIXE	Proton Induced X-ray Emission
PM	Particulate matter
PM_{10}	Particulate matter of less than 10 microns in diameter
PNA	Polynuclear aromatic
ppb	Parts per billion
ppb-k	Parts per billion - kilometer
ppbv	Parts per billion on a volume basis
PPE	Personal Protective Equipment
ppm	Parts per million
ppmC	Parts per million Carbon
ppmV	Parts per million by Volume
ppt	Parts per trillion
PQL	Practical quantitation limits
PSD	Prevention of significant deterioration
PTFE	Polytetrafluoroethylene
PUF	Polyurethane foam
PVC	Polyvinyl chloride
QA	Quality assurance
QAMS	Quality assurance management systems
QAMS	Quality assurance management staff
QAP	Quality Assurance Plan
QAPP	Quality assurance project plan
QC	Quality control
RA	Remedial action
RACT	Reasonable Available Control Technology
RAL	Reference ambient level
RAM	Rapid Analysis Mode
RAWBS	Remedial Action Work Structure
RCRA	Resource Conservation and Recovery Act
RD	Removal Design
RfC	Chronic Reference concentration
RfD	Reference Dose
RH	Relative Humidity
RI	Remedial investigation
RIA	Ranking Index Algorithm

RI/FS	Remedial investigation/feasibility study
RMM	Reference Measurement Method
ROD	Record of Decision
RPD	Relative percent difference
RPM	Remedial Project Manager
RRT	Relative retention time
RSD	Relative standard deviation
RT	Retention Time
SAP	Sampling and analysis plan
SARA	Superfund Amendments and Reauthorization Act
SAS	Special analytical services
SEM	Scanning Electron Microscopy
SI	Site inspection
SIM	Selected Ion Monitoring
SIP	State Implementation Plan
SITE	Superfund Innovative Technology Evaluation
SOP	Standard operating procedures
SOW	Scope (abatement) of work
SRM	Standard reference material
STEL	Short term exposure limit
SVOC	Semi-volatile organic compound
SW-846	Solid waste analytical protocols
TCA	Thermal Carbon Analysis
TAMS	Toxic Air Monitoring Station
TAP	Toxic air pollutant
TBC	To be considered
TCL	Target Compound List
TEA	Thermal Energy Analyzer
TEM	Transmission Electron Microscopy
TEOM	Tapering Element Oscillating Microbalance
THC	Total hydrocarbons
TIC	Tentatively identified compound
TLV	Threshold limit value
TLV-C	Threshold limit value--ceiling
TLV-STEL	Threshold limit value--short term exposure limit
TLV-TWA	Threshold limit value--time weighted average
TMO	Thermal Manganese Oxidation Carbon Analysis
TNMHC	Total nonmethane hydrocarbons
TO	Toxic organic
TOR	Thermal/Optical Reflectance Carbon Analysis
TOT	Thermal/Optical Transmission Carbon Analysis
TSDF	Transfer, storage, and disposal facilities
TSP	Total suspended particulates
TTN	Technology Transfer Network
TWA	Time weighted average

TWA-REL	Time weighted average--recommended exposure limit
TWA-STEL	Time weighted average--short term exposure limit
USACE	U.S. Army Corps of Engineers
UTAP	Urban Air Toxic Pollutant
UV	Ultraviolet
VFC	Volumetric Flow Controller
VOC	Volatile organic compound
WCOT	Wall-coated Open Tubular
XRD	X-Ray Diffraction
XRF	X-Ray Fluorescence

B-3. Definitions

Accuracy

The degree to which a measured value agrees with the true or accepted reference value (e.g., pollutant concentration), usually expressed as the percentage of the true or reference value represented by the difference between the two (true and measured) values.

Acidic compound

A compound which dissociates in water to form a hydrogen ion (proton) and the corresponding anion (for example, acetic acid dissociates into a hydrogen ion and the acetate anion).

Adsorbate

Solid material on the surface of which adsorption takes place.

Adsorption

A physical process in which molecules of gas, of dissolved substances, or of liquids adhere in an extremely thin layer to the surface of solid bodies with which they are in contact.

Air at normal conditions (standard air)

Air at 50 percent relative humidity, 70°F and 29.92 in. Hg (21°C and 760 mmHg). These conditions are chosen in recognition of the data which have been accumulated on air-handling equipment. They are sufficiently near the 25°C and 760 mmHg commonly used for indoor air contamination work that no conversion or correction ordinarily need be applied.

Air pollution

The presence of unwanted material in the air. The term “unwanted material” here refers to material in sufficient concentrations, present for a sufficient time, and under circumstances to interfere significantly with comfort, health, or welfare of persons or with the full use and enjoyment of property.

Aliquot

A representative portion of the whole.

Analyte

A discrete chemical component of a sample to be identified and/or measured through analysis.

Anion

A negatively charged ion.

Aromatic
Relating to the six-carbon-ring configuration of benzene and its derivatives.

Atmosphere, an
A unit of pressure qual to the pressure exerted by a vertical column of mercury 760 mm high, at a temperature of 0°C, and under standard gravity.

Atmosphere synthetic
A specific gaseous mass containing any number of constituents and in any proportion produced by man for a special purpose.

Background Concentrations or Levels
Average presence in the environment (USEPA). Concentrations of contaminants detected in environmental samples from various media on the site or in the area of the site that have not been affected by site operations. These concentrations may reflect the natural occurrence of elements, as in the case of metals in soil. They may also reflect the widespread presence of compounds resulting from a variety of industrial and commercial activities, as in the case of PAHs in surface soils in urban areas.

- Regional background concentrations--usually apply to soil and reference data from a resource such as Shacklette and Boerngen, "Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States," 1984.

- Site-specific background concentrations--reference actual sample collected on the site or in the area of the site. Examples of such samples are ground-water samples from a monitoring well upgradient of the site or surface soil samples from an area that has not been affected by FMGP operations.

Basic compounds
Compounds which protonate (add a hydrogen ion) in water to form a cation (e.g., amines).

Bias
The systematic or persistent distrotion of a measurement process which causes errors in one direction (i.e., the expected sample measurement is different than the sample's true value).

Boundaries
The spatial and temporal conditions and practical constraints under which environmental data are collected. Boundaries specify the area or volume (spatial boundary) and the time period (temporal boundary) to which the decision will apply. Samples are then collected within these boundaries.

Breathing zone
A sampling device consisting of a gas dispenser immersed in an absorbing liquid.

Bubbler
A sampling device consisting of a gas dispenser immersed in an absorbing liquid.

Calibration
Establishment of a relationship between the responses of a measurement system obtained by introducing various calibration standards into the system. The calibration levels should bracket the range of levels for which actual measurements are to be made.

Collection efficiency
The percentage of a specified substance retained by a gas cleaning or sampling device.

Condensate
Liquid or solid matter formed by condensation from the vapor phase. In sampling, the term is applied to the components of an atmosphere which have been isolated by simple cooling.

Condensation

The process of converting a material in the gaseous phase to a liquid or solid state by decreasing temperature, by increasing pressure, or both. Usually in air sampling, only cooling is used.

Contaminant

A material added by human or natural activities which may, in sufficient concentrations, render the atmosphere unacceptable.

Cryogenic collection (trapping)

A sampling process wherein an air sample is passed through a cooled trap (usually using liquid argon or material similar to the cryogen) to collect organic compounds.

Data collection design

A data collection design specifies the configuration of the environmental monitoring effort to satisfy the DQOs. It includes the types of samples or monitoring information to be collected; where, when, and under what conditions they should be collected; what variables are to be measured; and the Quality Assurance and Quality Control (QA/QC) components that ensure acceptable sampling design error and measurement error to meet the decision error rates specified in the DQOs. The data collection design is the principal part of the QAPP.

Data quality assessment (DQA) process

A statistical and scientific evaluation of the data set to assess the validity and performance of the data collection design and statistical tests, and to establish whether a data set is adequate for its intended use.

Data quality objectives (DQOs)

Qualitative and quantitative statements derived from the DQO Process that clarify study objectives, define the appropriate type of data, and specify the tolerable levels of potential decision errors that will be used as the basis for establishing the quality and quantity of data needed to support decisions.

Data quality objectives process

A quality management tool based on the Scientific Method, developed by the U. S. Environmental Protection Agency to facilitate the planning of environmental data collection activities. The DQO process enables planners to focus their planning efforts by specifying the intended use of the data (the decision), the decision criteria (action level), and the decision maker's tolerable decision error rates. The products of the DQO process are the DQOs.

Density

The mass per unit volume of substance.

Derivation

A sampling and analysis process wherein a compound to be monitored is converted to another more stable and/or readily detectable compound via chemical reaction during the sampling or analysis step.

Decision error

An error made when drawing an inference from data in the context of hypothesis testing, such that variability or bias in the data mislead the decision maker to draw a conclusion that is inconsistent with the true or actual state of the population under study. See also false negative decision error, false positive decision error.

Desorption

The process of freeing from a sorbed state.

Detection limit

The minimum quantity of a compound which yields a "measurable response." Many statistical

definitions of "measurable response" are in use. One must be careful to differentiate "instrumental detection limit," which refers to the minimum quantity of detectable material introducible into a measurement system from "method detection limit" which refers to the minimum concentration of compound in the sample which, when carried through the entire sampling and analysis process, can be detected.

Diffusion, molecular

A process of spontaneous intermixing of different substances, attributable to molecular motion and tending to produce uniformity of concentration.

Dispersion

The most general term for a system consisting of particulate matter suspended in air or other gases.

Diurnal

Recurring daily. Applied to air contaminants, diurnal indicates variations (in concentration) that follow a distinctive pattern and which recur from day to day.

Droplet

A small liquid particle of such size and density as to fall under still conditions but which may remain suspended under turbulent conditions.

Dust

A term loosely applied to solid particles predominantly larger than colloidal and capable of temporary suspension in air or other gases. Dusts do not tend to flocculate except under electrostatic forces; they do not diffuse but settle under the influence of gravity. Derivation from larger masses through the application of physical force is usually implied.

Efficiency

A measure of the performance of a collector. Usually it is the ratio of the amount collected to the inlet loading, expressed in percentage.

Electron capture detector (ECD)

A detection device for gas chromatography which responds sensitivity and selectively to electron deficient (e.g., halogenated, nitrosubstituted) compounds.

Elute

To remove sorbed materials from a sorbent by means of fluid.

Emissions

The total of substances discharged into the air from a stack, vent, or other discrete source.

False negative decision error

A false negative decision error occurs when the decision maker does not reject the null hypothesis when the null hypothesis actually is false. In statistical terminology, a false negative decision error is also called a Type II error. The measure of the size of the error is expressed as a probability, usually referred to as "beta (β)"; this probability is also called the complement of power.

False positive decision error

A false positive decision error occurs when a decision maker rejects the null hypothesis when the null hypothesis actually is true. In statistical terminology, a false positive decision error is also called a Type I error. The measure of the size of the error is expressed as a probability, usually referred to as "alpha (α)," the "level of significance," or "size of the critical region."

Filter

A porous medium for collecting particulate matter.

Filter, controlled pore

A filter of various plastics or metals having a structure of controlled uniform pore size. Sometimes referred to as a membrane or molecular filter.

Flame ionization detector (FID)

A detection device for gas chromatography which responds to most organic compounds.

Flame photometric detector (FPD)

A detection device for gas chromatography which responds selectively to sulfur- and phosphorus-containing compounds.

Flowmeter

An instrument for measuring the rate of flow of a fluid moving through a pipe or duct system. The instrument is calibrated to give either volume or mass rate of flow.

Fluorescence spectrometry

The measure of ultraviolet or visible radiation emitted by a compound after excitation with radiation of a lower wavelength. The technique is widely used for the determination of polynuclear aromatic hydrocarbons.

Fly ash

The finely divided particles of ash entrained in flue gases arising from the combustion of fuel. The particles of ash may contain incompletely burned fuel. The term has been applied predominantly to the gas-born ash from a boiler with a spreader stroker, an underfeed stoker, and pulverized fuel (coal) firing.

Fog

A term loosely applied to visible aerosols in which the dispersed phase is liquid. Formation by condensation is usually implied. In meteorology, a dispersion of water or ice.

Fractionation

The process of separating a mixture into components having different properties (as by distillation, precipitation, or screening).

Freezing out

See sampling, condensation, or cryogenic collection.

Fume

Properly, the solid particles generated by condensation from the gaseous state, generally after volatilization from melted substances, and often accompanied by a chemical reaction such as oxidation. Fumes flocculate and sometime coalesce. Popularly, the term is used in reference to any or all types of contaminant and, in many laws or regulations, with the added qualification that the contaminant have some unwanted action.

Gas

One of the three states of aggregation of matter, having neither independent shape nor volume and tending to expand indefinitely.

Gas chromatography (GC)

A separation technique for organic compounds wherein the stationary phase is a solid, liquid coated on a solid, or liquid coated or bonded to the interior column wall (capillary column) and the mobile phase is an inert gas.

Gas meter

An instrument for measuring the quantity of a gas passing through the meter.

Grab sample

See sampling, instantaneous.

Halogenated compound

A compound containing chlorine, bromine, or iodine.

Impaction

A forcible contact of particles of matter; a term often used synonymously with impingement.

Impactor

A sampling device that employs the principle of impaction (impingement). The "cascade impactor" refers to a specific instrument which employs several impactions serially to collect successively smaller sizes of particles.

Impingement

The act of brining matter forcibly into contact. As used in air sampling, impingement refers to a process for the collection of particulate matter in which the gas being sampled is directly forcibly against a surface.

Internal standard

A known quantity of a reference compound added to a collected sample for use in the quantification of other compounds.

Inversion

A reversal of the normal atmospheric temperature gradient, thus an increase of air temperature with increasing altitude.

Ionic or ionizable compound

A compound which dissociates in water to give ionic species (i.e., acidic or basic compounds).

Limits on decision errors

The tolerable decision error probabilities established by the decision maker. Potential economic, health, ecological, political, and social consequences of decision errors should be considered when setting the limits.

Mass concentration

Concentration expressed in terms of mass of substance per unit volume of gas or liquid.

Mass spectroscopy

A widely used analytical technique capable of identifying and quantifying organic materials on the basis of the mass fragmentation pattern. Most commonly used for organic analysis in combination with gas chromatography (.e., GC-MS).

Meteorology

The science dealing with the atmosphere and weather conditions.

Mist

Liquid, usually water in the form of particles suspended in the atmosphere at or near the surface of the earth; small water droplets floating or falling, approaching the form of rain, and sometimes distinguished from fog as being more transparent or as having particles perceptibly moving downward.

Neutral compound

A compound which does not ionize in water (e.g., not acidic or basic).

Nitrogen-phosphorous detector (NFD)

A detection device for gas chromatography which is sensitive and selective for nitrogen- and phosphorus-containing organic compounds.

Orifice meter

A flowmeter employing as the measure of flow rate the difference between the pressures measured on the upstream and downstream sides of the orifice (that is, the pressure differential across the orifice) in the conveying pipe or duct.

Particle

A small discrete mass of solid or liquid matter.

Particle concentrations

Concentration expressed in terms of number of particles per unit volume of air or other gas. NOTE: On expressing particle concentration the method of determining the concentration should be stated.

Particle fall

A measurement of air contamination consisting of the mass rate at which solid particles deposit from the atmosphere. A term used in the same sense as the older terms “dust fall” and “soot fall” but without any applications to nature and source of the parrticles.

Particle size

An expression for the size of liquid or solid particles expressed as the average or equivalent diameter.

Particle size distribution

The relative percentage by weight or number of each of the different size fractions of particulate matter.

Particulate

Solids or liquids existing in the form of separate particles.

Phase distribution

The relative amounts of a compound associated with the particle and gas phases in the atmosphere.

Photo ionization detector (PID)

A detection device for gas chromatography which detects aromatic, halogenated, and olefinic compounds but is relatively insensitive to aliphatic compounds. The selectivity can be adjusted by the choice of lamp energy.

ppb

A unit of measure of the concentration of gases in air expressed as parts of the gas per billion (10^9) parts of the air-gas mixture, normally both by volume (ppbv).

ppm

A unit of measure of the concentration of gases in air expressed as parts of the gas per million parts of the air-gas mixture, normally both by volume (ppmv).

Precipitation, meteorological

The deposit on the earth of water from the atmosphere in the form of hail, mist, rain, sleet, and snow. Deposits of dew, fog, and frost are excluded.

Precision

The degree of agreement of repeated measurements of the same property, expressed in terms of dispersion of test results about the main result obtained by repetitive testing of a homogeneous sample under specified conditions. The precision of a method is expressed quantitatively as the standard deviation computed from the results of a series of controlled determinations.

Pressure, gage

The difference between pressure existing within a system and that of the atmosphere. Zero gage pressure is equal to atmospheric pressure.

Pressure, static

The pressure of a fluid at rest or in motion, exerted perpendicularly to the direction of flow.

Pressure, total

The pressure representing the sum of static pressure and velocity pressure at the point of measurement.

Pressure, velocity

That pressure caused by and related to the velocity of the flow of fluid; a measure of the kinetic energy of the fluid.

Probe

A tube used for sampling or for measuring pressures at a distance from the actual collection or measuring apparatus. It is commonly used for reaching inside stacks and ducts.

Quality assurance

An integrated system of management activities involving planning, quality control, quality assessment, reporting, and quality improvement to ensure that a product or service (e.g., environmental data) meets defined standards of quality with a stated level of confidence.

Quality control

The overall system of technical activities that measures the attributes and performance of a process, item, or service against defined standards to verify that they meet the stated requirements established by the customer.

Rotameter

A device, based on the principle of Stoke's law, for measuring rate of fluid flow. It consists of a tapered vertical tube having a circular cross section and containing a float that is free to move in a vertical path to a height dependent upon the rate of fluid flow upward through the tube.

Sample, cumulative

A sample obtained over a period of time (1) with the collected atmosphere being retained in a single vessel or (2) with a separated component accumulating into a single whole. Examples are dust sampling, in which all the dust separated from the air is accumulated in one mass of fluid; the absorption of acid gas in an alkaline solution; and collection of air in a plastic bag or gasometer. Such a sample does not reflect variations of concentration during the sampling period.

Sample, running

Withdrawal of a portion of the atmosphere over a period of time along with continuous analysis or with separation of the desired material continuously and in a "linear" form. Examples are continuous withdrawal of the atmosphere accompanied by absorption of a component in a flowing stream of absorbent or by filtration in a moving strip of paper. Such a sample may be obtained with a considerable concentration of the contaminant, but it still indicates fluctuations in concentration which occur during the sampling period.

Sampling

A process consisting of the withdrawal or isolation of a fractional part of a whole. In air or gas analysis, the separation of a portion of an ambient atmosphere with or without the simultaneous isolation of selected components.

Sampling, condensation
A process consisting of the collection of one or several components of a gaseous mixture by simple cooling of the gas stream in a device which retains the condensate.

Sampling, continuous
Sampling without interruptions throughout an operation or for a predetermined time.

Sampling, instantaneous
Obtaining a sample of an atmosphere in a very short period of time, so that this sampling time is insignificant in comparison with the duration of the operation or the period being studied.

Sampling, intermittent
Sampling successively for limited periods of time throughout an operation or for a predetermined period of time. The duration of sampling periods and of the intervals between are not necessarily regular and are not specified.

Sampling train
The assemblage of equipment necessary to sample atmospheres.

Sensor
A device designed to respond to a physical stimuls (as temperature, illumination, and motion) and to transmit a resulting signal for interpretation or measurement or for operating a control.

Smog
A term derived from the terms “smoke” and “fog”, applied to extensive atmospheric contamination by aerosols, these aerosols arising partly through natural processes and partly from the activities of human subject. Now sometimes used loosely for any contamination of the air.

Smoke
Small gas-borne particles resulting from incomplete combustion, consisting predominantly of carbon and other combustible material, and present in sufficient quantity to be observable independently of the presence of other solids.

Soot
Agglomerations of particles of carbon impregnated with “tar”, formed in the incomplete combustion of carbonaceous material.

Specific gravity
The ratio of the density of the substance in question to the density of a reference substance at specified conditions of temperature and pressure.

Spectrometry
A method of identification of a compound by identification of the spectrum produced.

Spectrophotometry
A method for identification of substances and determination of their concentrations by measuring light transmittance in different parts of the spectrum.

Standard operating procedure (SOP)
A detailed desorption of the operation of a sampling or analysis system for a specific application.

Temperature, absolute
(a) Temperature measured on the thermodynamic scale, designated as Kelvin (K). (b) temperature measured from absolute zero (-273.18°C or -459.58°F). The numerical values are the same for both the Kelvin scale and the ideal gas scale.

Validation, data

A systematic effort to review data to identify outliers or errors and thereby cause deletion or flagging of suspect values to assure the validity of the data for the user.

Validation, method

The process of documenting the performance characteristics of a method through the analysis of blanks and replicate samples of known analyze concentration. The analyze concentrations tested should cover the range likely to be encountered in the actual monitoring situation.

Vapor

The gaseous phase of matter that normally exists in a liquid or solid state.

Volume concentration

Concentration expressed in terms of gaseous volume of substance per unit of air or other gas usually expressed in parts per million (ppmv) or parts per billion (ppbv).